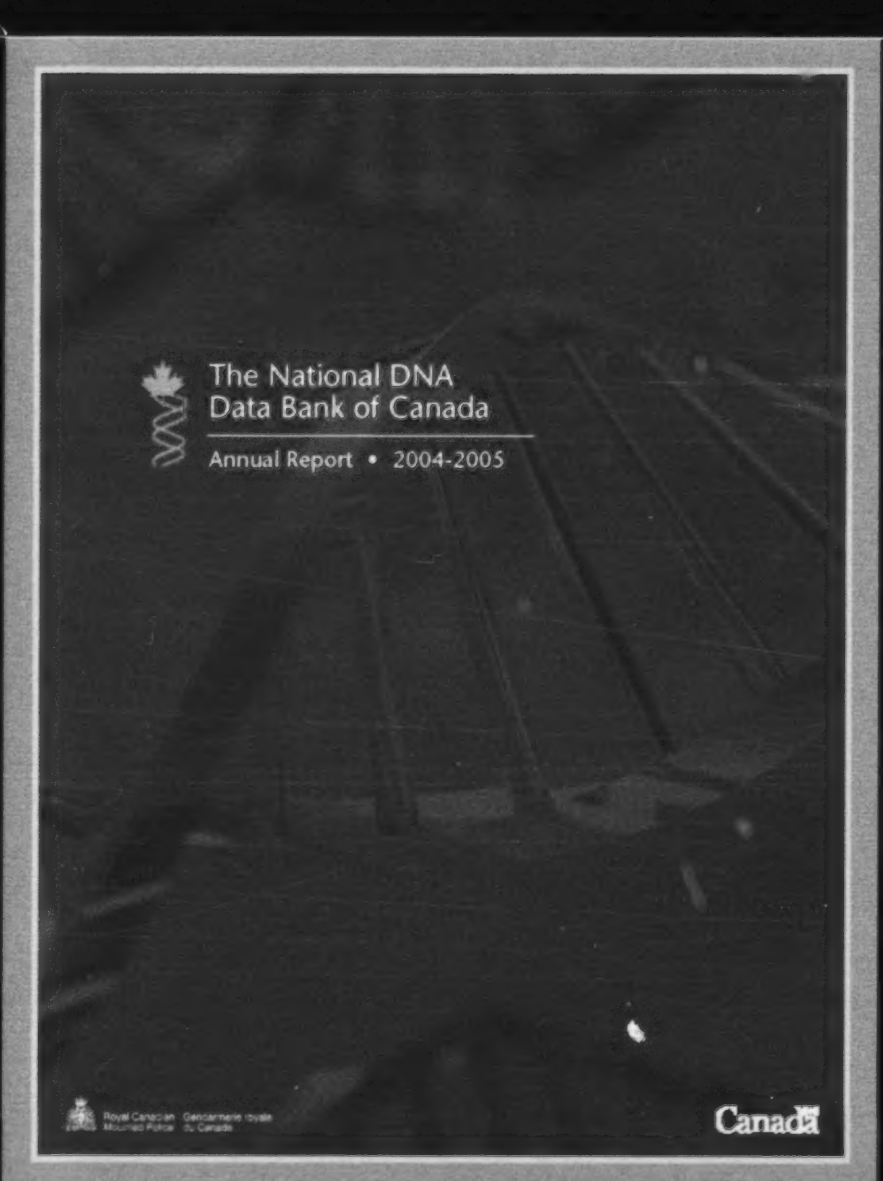

The National DNA Data Bank of Canada

Annual Report • 2004-2005

Royal Canadian Mounted Police / Gendarmerie royale du Canada

Canada

Table of Contents

Message from the Deputy Prime Minister and the Minister of Public Safety and Emergency Preparedness Canada 2

Message from the Commissioner of the Royal Canadian Mounted Police 3

Executive Summary 4

Harnessing the Power of DNA Analysis 7

Strengthening DNA Legislation 8

The National DNA Data Bank (NDDB) 9

Process for Reporting Matches: Convicted Offender Profile to Crime Scene Profile 10

The Working Science 12

Five-year Report Card from the Advisory Committee: "Straight A's for the Data Bank!" 15

Key Statistics 18

Financial Statement 21

Appendix A: List of Primary Offences – Criminal Code 22

Appendix B: List of Secondary Offences – Criminal Code 23

The NDDB's First Five Years: A Prosecutor's Perspective 24

Success Story 1: Unrelated cases tied together by a cigarette butt 26

Success Story 2: National DNA Data Bank and diligent police work solve 10-year-old murder 28

Success Story 3: Cross-border crime fighting 30

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The Helix and Maple Leaf Design is a recognized symbol for quality and excellence in forensic DNA analysis developed as part of the innovation of the National DNA Data Bank (NDDB). The NDDB is a branch of the Forensic Laboratory Services which is a component of the National Police Services, Royal Canadian Mounted Police. The Helix and Maple Leaf Design is an Official Trademark under the Trademark Act.

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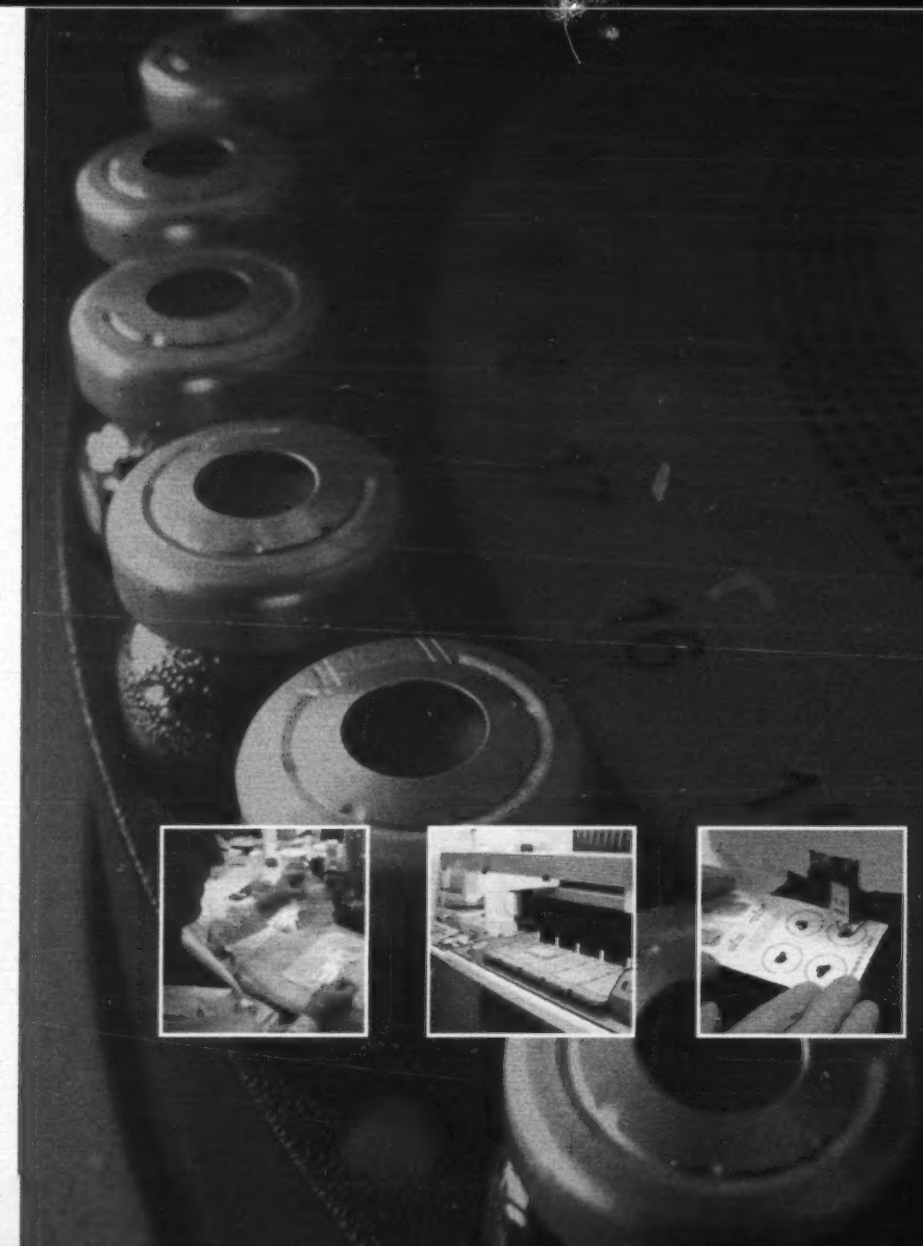


Message from the Deputy Prime Minister of Canada and the Minister of Public Safety and Emergency Preparedness Canada

By any measure, the National DNA Data Bank of Canada (NDDB) is an unqualified success.

Created by federal legislation, it is a shining example of partnership across the entire justice system – both here in Canada and abroad. Key partners include Canada's forensic laboratories, provincial and municipal law enforcement partners, the legal and justice communities, along with officials in my department and in the Department of Justice.

In just five short years, the NDDB has provided the law enforcement community and the courts with one of the most important investigative tools ever developed. Canadians can feel safer because the National DNA Data Bank has revolutionized the way we investigate and prosecute crimes, while providing unparalleled protection to the innocent.

Since opening its doors in June 2000, the NDDB has played a key role in helping to solve hundreds of serious crimes. The reality is that some of these crimes would still be unsolved today without the contributions of the NDDB's scientists and technologists.

Across the justice system, judges and prosecutors are witnessing the power of forensic DNA and applying the law to ensure that samples are obtained from convicted offenders. The NDDB is capable of handling many more DNA profiles a year and its expanding indices are generating ever-increasing numbers of links between offenders and unsolved crimes. In addition, NDDB scientists are able to use DNA to link the same perpetrator to multiple crime scenes.

The power of forensic DNA to solve even the most difficult criminal case is well documented. As we look to the future, I am hopeful that the growing number of NDDB hits will start to have a deterrent effect. Repeat offenders will soon realize that DNA left at a crime scene will be matched to the profile that sits forever in the National DNA Data Bank.

As the Minister responsible for public safety in Canada, I have been pleased and impressed by the contributions of the National DNA Data Bank to the administration of justice. Canadians can be confident that public safety will be further enhanced as more and more samples are entered into the NDDB, where scientists will generate powerful investigative leads for police, irrefutable evidence for prosecutors and foolproof protection for the innocent.

The Honourable Anne McLellan

Message from the Commissioner of the Royal Canadian Mounted Police

In its first annual report, I wrote that the arrival of the National DNA Data Bank (NDDB) had signaled the dawn of a new era in the administration of justice in Canada.

Today, as we present the fifth annual report, I can state with absolute certainty that the NDDB has exceeded those early expectations and proven itself to be one of the most powerful tools available to the Canadian police community.

Over the course of year one, scientists provided critical evidence in more than two dozen different criminal cases, offering early, tangible proof of the NDDB's value.

Now, after five years of operation, the total number of hits has increased to more than 3,000. These remarkable results speak to the power of integration and partnership, as NDDB scientists complement the diligent work of police, prosecutors and the judiciary. All are to be commended for making such extraordinary progress.

The NDDB is also demonstrating value in ways that were not envisioned when the *DNA Identification Act* was proclaimed in June 2000. For example, a strong correlation between offenders who commit serious, "primary" offences (e.g. murder) and the likelihood they have also been involved in "secondary" offences (e.g. break and enter) has been confirmed. This means that DNA profiling to solve secondary offence investigations may also link the offenders to unsolved, serious crimes like sexual assault. This link is often the critical piece of evidence that leads to an arrest. Equally powerful is the value of DNA in ruling out suspects and exonerating the innocent.

When we talk about the National DNA Data Bank, the focus is often on the groundbreaking science and technology. But we must also applaud the world-class competence, innovation and dedication of NDDB employees and their partners in forensic laboratories, police agencies and throughout the legal and justice communities.

Fundamentally, our work provides safer streets and safer communities for all Canadians and increasingly, for citizens around the world.

Commissioner G. Zaccardelli

Executive Summary

After five years of operation, the National DNA Data Bank of Canada (NDDB) is one of the most powerful investigative tools ever developed.

Recognized worldwide for its productivity, efficiency and use of cutting-edge technology, the NDDB has revolutionized the way crimes are investigated and prosecuted in Canada, while providing unparalleled protection to the innocent.

NDDB scientists have supplied vital investigative leads in thousands of criminal investigations, including 191 murders, 382 armed robberies and 478 sexual assaults.

The efficiency of the sample analysis and the number of matches generated at the NDDB have far exceeded expectations and have helped to secure convictions in cases where the chances of success would have been very slim only a decade ago. Equally important is its value in ruling out potential suspects and exonerating the innocent.

Forensic DNA Science

DNA, or deoxyribonucleic acid, is a long, double-stranded molecule that looks like a twisted rope ladder or double helix.

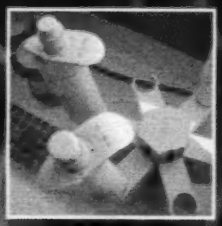
Sometimes referred to as the blueprint of life, DNA is the fundamental building block for your entire genetic makeup. It is found in virtually every tissue in the human body. The DNA in your blood is the same as the DNA in your skin cells, saliva and the roots of your hair. Highly discriminating, DNA is a powerful tool for identifying individuals. With the exception of identical twins, each person's DNA is unique.

Through modern technology, DNA can be extracted from a minute biological sample taken from blood, semen, hair or saliva. The resulting DNA profile can then be compared to an unknown profile obtained from a different biological sample. If the profiles match, the two samples come from the same person (or identical twins). If the profiles do not match, the samples come from different people.

As of March 31, 2005, there were almost 100,000 profiles entered into the NDDB's two indices: the Convicted Offender Index (COI) and the Crime Scene Index (CSI). The COI contains DNA profiles from offenders convicted of a designated offence such as homicide, manslaughter and break and enter. The CSI is made up of DNA profiles derived from biological substances (e.g. blood, semen, saliva) left at the scene of a crime.

Scientists at the NDDB compare these profiles to either link a suspect to a specific crime scene or to rule that suspect out. Evidence from different crime scenes can be compared to link the same perpetrator to multiple offences, whether the crimes took place locally, across the country or halfway around the world.

NDDB scientists have supplied vital investigative leads in thousands of criminal investigations, including 191 murders, 382 armed robberies and 478 sexual assaults.



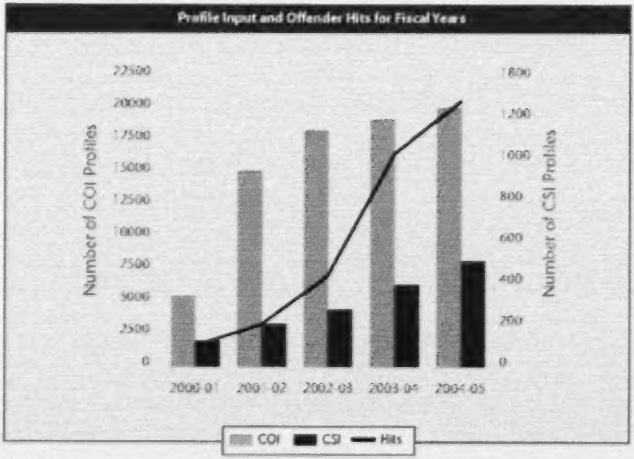
Future Priorities

The NDDB's success is directly related to the size of the Crime Scene Index and the Convicted Offender Index. To further expand those indices, the NDDB must continue to focus on education and communication.

There is a simple equation at the core of this priority: as more profiles enter the Data Bank, there is a corresponding increase in the number of convicted offender and crime scene hits.

The NDDB is capable of handling more samples per year. To date, only half the anticipated volume of biological samples from primary offence convictions has been received by the NDDB. However, the number of samples from secondary offences – where the judge has more discretion to order a sample – is much higher than originally expected.

Along with sample volumes, the NDDB will continue to give priority attention to the link between secondary and primary offences. Evidence from other DNA data banks around the world indicates that many petty criminals will also commit more serious offences. NDDB scientists are increasing the odds of generating hits on more violent offences, like murder and sexual assault, by making a concerted effort to analyze samples from secondary offences, like break and enter.



Harnessing the Power of DNA Analysis

DNA analysis was first used by the RCMP in 1989 in an investigation in which a suspect denied any involvement in a sexual assault, but the victim identified him as the attacker. DNA analysis later confirmed the victim's story. After the DNA test results were presented in court, the suspect changed his plea to guilty.

At this early stage, there was no central coordination at the national level that could help police take full advantage of the unfolding advances in DNA technology. In 1995, the Canadian *Criminal Code* was amended to add DNA warrant provisions. Under these provisions, a provincial court judge may authorize the collection of a DNA sample from a suspect for the purpose of forensic DNA analysis in the course of the police investigation of a designated *Criminal Code* offence.

In order for this new tool to be used to its full potential, there was a need to coordinate DNA profiling data from investigations across the country. With support from all levels of government, the general public and police agencies throughout Canada, decisive steps were taken to create the National DNA Data Bank.

In 1996, the Department of the Solicitor General (as it was then known) and the Department of Justice undertook Canada-wide consultations regarding the establishment of a national DNA data bank. The following groups participated in these consultations:

- Provinces and territories
- Police associations
- Privacy officials
- Bar associations
- Victim advocates
- Women's groups
- Correctional officials
- Medical and scientific organizations

Confirming the Government of Canada's commitment to combat crime and especially violent crime, Bill C-3, the *DNA Identification Act* (S.C. 1998 c.37) received Royal Assent on December 10, 1998 and was proclaimed in force on June 30, 2000.

That same year, Parliament enacted Bill S-10, *An Act to amend the National Defence Act, the DNA Identification Act and the Criminal Code* (S.C. 2000, c.10). The RCMP then built the National DNA Data Bank after Bill C-3 received Royal Assent. The project was completed on time and under budget.

Strengthening DNA Legislation

In June 2000, the National DNA Data Bank of Canada (NDDB) was created by federal legislation called the *DNA Identification Act*. In May 2005, Parliament passed a series of amendments to further strengthen the Act.

The amended law enhances the retroactive scheme which deals with NDDB orders made against offenders convicted prior to June 2000. The list of eligible offenders now includes a person convicted of one murder, one manslaughter or one sexual offence. Under the original legislation, the retroactive scheme applied to multiple murders or sexual assaults committed at different times. The definition of sexual offences has also been expanded. This amendment is expected to double the number of offenders whose profiles can be added to the NDDB under the retroactive scheme.

Designated Offences

Other changes not yet in effect are the expansion of the designated offences that can lead to a National DNA Data Bank order where the person is convicted of a designated offence after June 30, 2000. The list of primary designated offences (see page 22) has been expanded to include, among others, the sexual exploitation of a person with a disability and the extortion and intimidation of a justice system participant or journalist.

Several other crimes, such as robbery and various offences related to child pornography, will be moved from the secondary to primary list of designated offences. Sixteen of the most serious primary offences are listed separately. The courts will be obliged to order the offender to provide a biological sample for the purpose of developing a DNA profile to be added to the NDDB's Convicted Offender Index when a person is convicted of one of these offences.

The list of secondary offences will also be greatly expanded. It will include *Criminal Code* offences, as well as *Controlled Drugs and Substance Act* offences of trafficking, importing and producing, where the offence has a maximum penalty of five years or more and is prosecuted by indictment. Among these are new secondary offences including criminal harassment, uttering threats and participation in the activities of a criminal organization.

For secondary offences, a court may order the offender to provide a biological sample only after considering the person's criminal record, the nature and circumstances of the offence and the impact of such an order on his or her privacy and security of the person.

The National DNA Data Bank (NDDB)

The NDDB is part of the RCMP's National Police Services, administered by Canada's national police agency for the benefit of the entire law enforcement community. It currently employs 23 people and operated over the last fiscal year on a budget of approximately $2.4 million.

When the NDDB reaches full capacity, it is expected the number of staff will expand to 29 and the annual budget will be $5 million.

The NDDB serves three forensic lab partners across Canada: the RCMP, with facilities in Ottawa, Edmonton, Vancouver, Regina, Halifax and Winnipeg; the Centre of Forensic Sciences in Toronto; and Montreal's Laboratoire de sciences judiciaires et de médecine légale.

Biological samples from convicted offenders are processed by NDDB analysts into DNA profiles which are then entered into the Convicted Offender Index. The NDDB also contains the Crime Scene Index (CSI), a separate electronic database composed of DNA profiles from crime scene evidence. These profiles are submitted by our forensic laboratory partners across the country.

Playing a Vital Role

The NDDB assists law enforcement agencies in solving crimes by:

- linking crimes together where there are no suspects;
- helping to identify suspects;
- eliminating suspects where there is no match between crime scene DNA and a profile in the NDDB; and,
- determining whether a serial offender is involved.

The NDDB improves the administration of justice by ensuring that those who commit serious crimes are identified more quickly and by focusing investigations for the elimination of suspects.

Thousands of police officers across Canada have been trained to collect DNA samples, which are then forwarded to the NDDB for analysis. As of March 31, 2005, there have been 75,138 DNA profiles from convicted offenders added to the NDDB, along with 20,118 profiles from crime scenes.

Cutting Edge Technology

Canada's National DNA Data Bank relies heavily on robotic technology to dramatically speed up the processing and analysis of DNA samples. The robotics, combined with a world-class sample tracking and control system, allow NDDB personnel to process more samples in less time and at a significantly lower cost than other facilities around the world. The specialized sample tracking and control system (STaCS™) also protects the privacy of the individual and ensures security of the data.

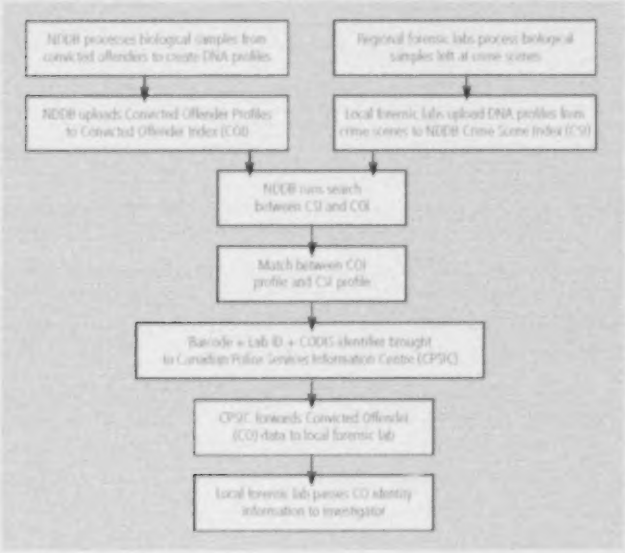
Protecting Privacy

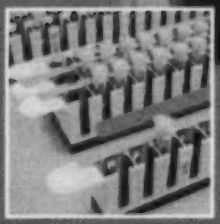
Every effort has been made to balance an offender's right to privacy with the need for police officers to identify suspects. Consistent with the *DNA Identification Act*, the RCMP has imposed strict procedures governing the handling of DNA profiles and biological samples to ensure that privacy interests are protected. Information collected by the NDDB is used strictly for law enforcement purposes.

A National DNA Data Bank Advisory Committee (see page 15) has also been established to advise the Commissioner of the RCMP on matters relating to the establishment and operation of the NDDB. These matters are consistent with the requirements of the *DNA Identification Act* regarding privacy, legal, ethical and human rights issues.

Process for Reporting Matches:

Convicted Offender Profile to Crime Scene Profile


NDDB processes biological samples from convicted offenders to create DNA profiles
Regional forensic labs process biological samples left at crime scenes
NDDB uploads Convicted Offender Profiles to Convicted Offender Index (COI)
Local forensic labs upload DNA profiles from crime scenes to NDDB Crime Scene Index (CSI)
NDDB runs search between CSI and COI
Match between COI profile and CSI profile
Barcode + Lab ID + CODIS identifier brought to Canadian Police Services Information Centre (CPSIC)
CPSIC forwards Convicted Offender (CO) data to local forensic lab
Local forensic lab passes CO identity information to investigator



The Working Science

The Crime Scene Index (CSI) is an electronic database composed of DNA profiles obtained from crime scene investigations of designated offences.

CSI samples are processed by the three forensic laboratorysystems in Canada: RCMP Forensic Laboratory Services (Vancouver, Edmonton, Regina, Winnipeg, Ottawa and Halifax); Laboratoire de sciences judiciaires et de médecine légale (Montréal, Québec); and the Centre of Forensic Sciences (Toronto, Ontario).

The NDDB retains an electronic index of the DNA profile data from the crime scene along with basic details such as the date, location of the donor laboratory and a unique number identifier that allows information to be compared by the donor laboratory in the event of a future match.

The Convicted Offender Index (COI) is the electronic DNA profile database developed from biological samples collected from:

1. Offenders convicted of designated primary and secondary offences (see Appendices A and B) identified in section 487.04 of Canada's *Criminal Code*, and,

2. Retroactive offenders who fall within categories identified in section 487.055 of the *Criminal Code*. (see explanatory notes for Table 5 on page 19) This would include offenders convicted of multiple murders or sexual offences before the *DNA Identification Act* went into effect in June 2000. Convicted criminals designated as dangerous offenders prior to this date are also included.

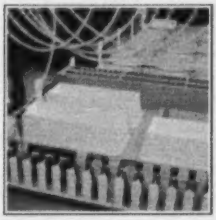
Biological samples can be collected in three ways:

1. **Blood.** The sample is obtained by pricking the fingertip with a sterile lancet and collecting bloodstains on a specially prepared sample card.

2. **Buccal.** The sample is obtained by rubbing the inside of the mouth with a foam applicator to obtain skin cells that are then transferred to the sample card.

3. **Hair.** The sample is obtained by pulling 6-8 hairs with the root sheath attached and placing them on a special sample card.

These samples are collected across Canada and are processed into DNA profiles at the National DNA Data Bank. The information is entered into "CODIS" (Combined DNA Index System), a software package that stores and compares DNA profiles. CODIS was developed by the FBI and the U.S. Department of Justice and provided to the NDDB at no cost. This software program provides a universally accepted standard for forensic laboratories to compare DNA results.



It is important to realize that both crime scene samples and convicted offender samples are identified simply by a bar code number. In fact, the process separates the donor identity of the convicted offender from the genetic information at the time the sample arrives at the NDDB. A bar code number links the personal information to the DNA sample. This link is protected information that is not accessible by NDDB staff and is kept in a separate registry by the RCMP's Canadian Criminal Records Information Services (CCRIS).

The DNA profiles obtained from either convicted offender samples or crime scene samples are the result of 13 special DNA tests that collectively produce a DNA profile, unique to each individual.

Legal Protection

Canadian law makes it very clear that the NDDB profiles can only be used for law enforcement purposes. The regions of interest that Canadian forensic scientists use for profiling are considered anonymous pieces of DNA and, apart from gender, do not specify any medical or physical information about the donor. The 13 core tests or "loci" chosen for forensic analysis in Canada are the same regions of genetic variation used throughout the United States and in many other countries conducting forensic DNA analysis.

NDDB scientists are constantly investigating ways to enhance the analytical operation through the application of new scientific knowledge or the use of new technology. Forensic laboratories, for example, are making better use of automation to increase the volume of biological samples processed by their staff. Consequently, the NDDB has taken steps to boost capacity in order to upload more DNA profiles into the Crime Scene Index.

Five-year Report Card from the Advisory Committee:

The National DNA Data Bank of Canada is a model for the rest of the world and has the potential to do even more.

"Straight A's for the Data Bank!"

The National DNA Data Bank of Canada is a model for the rest of the world and has the potential to do even more, according to Richard Bergman, the Chairperson of the NDDB Advisory Committee.

A retired Deputy Commissioner, he is a former head of the RCMP's Scientific and Technical Programs. He is unequivocal in his support for the NDDB.

"It's doing what it was set up to do, and then some," says Mr. Bergman, who has served as Advisory Committee Chairperson since its inception five years ago. "It's helping to convict the guilty and exonerate the innocent. In addition, as more samples are processed, the number of hits continues to climb."

He chairs an extraordinary committee of experts who provide analysis and advice to ensure the NDDB operates within both the spirit and the letter of the *DNA Identification Act*.

Committee members:

Dr. Frederick R. Bieber, Canadian-born Associate Professor of Pathology in the Faculty of Medicine at Harvard University. Dr. Bieber is a medical geneticist and a specialist in bio-medical ethics.

Dr. George R. Carmody, an Adjunct Professor of Biology at Ottawa's Carleton University. A previous Assistant Professor, Associate Professor and Associate Dean of Science, Dr. Carmody is a regular expert witness in DNA-related court cases in Canada.

The Honourable Peter Cory, C.C., C.D., Q.C., retired Justice of the Supreme Court of Canada. The Honourable Peter Cory is currently working with the Federal Department of Justice, Osler ADR Centre, and was appointed Chancellor of York University in June 2004.

Gisèle Côté-Harper, O.C., Q.C., a graduate of Harvard Law School and currently a Barrister and a Professor at the Faculty of Law, Université Laval, specializing in Criminal Law and Human Rights.

Dr. William S. Davidson, Professor of Molecular Biology and Biochemistry, Simon Fraser University (Burnaby, B.C.). A former Dean of Science (Simon Fraser), Associate Dean of Science and Acting Dean of Science (Memorial University, St. John's, Newfoundland), Dr. Davidson has published widely in the areas of molecular evolution, population genetics, genomics and human genetics.

Raymond D'Aoust, Assistant Privacy Commissioner of Canada.

Dr. Ron Fourney, Officer in Charge, National DNA Data Bank of Canada.

Mr. Bergman emphasizes that the committee is unanimous in its positive assessment of the NDDB after five years of operation. Moreover, he and his colleagues recognize that as the law enforcement and justice communities focus greater attention on generating convicted offender profiles, the NDDB will move that much closer to achieving its full potential.

Increasing Sample Volume

For example, the NDDB had expected to receive biological samples from the majority of those 18,000 individuals convicted of primary offences and approximately 10,000 samples from some of the secondary offenders each year.

The reality is that the NDDB is receiving biological samples for about half of the primary offences. Ironically, the number of samples from secondary offences – where the judge is given more discretion to order a sample – is much higher than originally expected.

"The number of primary offence samples has been a concern for some time," Mr. Bergman adds. "We have to address this issue in order to reap the full benefits of the NDDB in terms of arrests and convictions."

The answer, he says, lies in raising the awareness of the key players involved: police investigators, crown prosecutors and judges. If each of them recognizes the critical importance of ordering a biological sample after conviction, it is much more likely to happen.

"But, the court system is very busy, and sometimes the orders are not made," Mr. Bergman says. "The risk is that we lose the opportunity to add offenders to the NDDB, which means we could miss them the next time they commit a serious crime and leave a biological sample at the scene."

Favourable Comparison

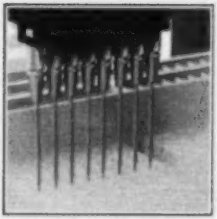
Despite receiving smaller sample volumes than anticipated, Mr. Bergman points out that the proportion of hits generated by the NDDB is very high compared to other data banks.

He also praises the unique protections that were built into Canada's DNA Data Bank: the only facility of its kind that completely separates biological and biographical information at the point of entry.

"What that means," he explains, "is that technologists at the bench deal only with anonymous samples. They do not have any information to identify the person. Canadians can feel confident in the NDDB's objectivity."

Making the Link

Along with increasing the sample volumes, the other emerging priority is the link between secondary and primary offences.



"As we studied other data banks around the world, we learned that this link is stonger than expected," notes Mr. Bergman. " B y making a concerted effort to increase the samples from those convicted of secondary offences, we greatly increase the chances of generating a hit on a more violent offence."

Following a recommendation from the Advisory Committee, and at the request of many Canadian law enforcement agencies, special units were established to process biological samples recovered from high volume crimes such as break and enter. These units are housed within the main forensic laboratories in Canada – the RCMP Forensic Laboratory Services, Toronto's Centre of Forensic Sciences and the Laboratoire de sciences judiciaires et de médicine légale in Montréal. The DNA profiles are provided to the NDDB for inclusion in the Crime Scene Index.

Missing Persons Index

When asked about NDDB priorities for the next five years, Mr. Bergman says theCommittee supports the creation of a missing persons index for Canada that would apply the NDDB's proven technology. Since security and privacy issues have already been addressed in the design of the National DNA Data Bank, the Committee also supports the establishment of such an index within the existing DNA Data Bank.

A second priority relates to the benefits of enhanced automation and robotics to process more samples in a shorter period of time.

"These improvements will allow the NDDB to assist other types of forensic investigation, such as mass disaster identification. The 1998 Swiss Air crash off the coast of Nova Scotia is a good example of that," Mr. Bergman concludes. "And, of course, the National DNA Data Bank will also be ready to handle what we hope will be a steady increase in samples from both primary and secondary offence convictions."

Key Statistics

(as of March 31, 2005)

Table 1: Cases Assisted by the NDDB	
Murder	191
Sexual Assault	478
Attempted Murder	71
Robbery (armed)	382
Break and entering with intent, committing offence, or breaking out	1,640
Assault (+)	176
Other	48
Total	**2,986**

Table 2: Match Inventory Report	
Offender Hits	2,986
Forensic Hits	380
Offender Duplicate	2,047
Identical DNA profiles, but from different individuals (i.e. identical twins)	31

Explanatory Notes

An offender "hit" occurs when a DNA profile developed from a biological sample from a crime scene is sent to the NDDB and it matches an individual's DNA profile included in the NDDB's Convicted Offender Index.

A forensic "hit" occurs when a crime scene DNA profile is sent to the Crime Scene Index of the NDDB and matches another crime scene DNA profile included in the NDDB's Crime Scene Index.

Offender duplicate refers to cases where two samples from the same person were submitted to the NDDB.

Identical DNA profiles but different individuals (identical twins) refers to the DNA profiles of 31 sets of identical twins that are currently contained in the NDDB's Convicted Offender Index.

Table 3: DNA Profiles Entered into the NDDB	
Entered into the Convicted Offender Index	75,138
Entered into the Crime Scene Index	20,118
Total	**95,256**

Note: The NDDB receives 350 to 450 samples per week.

Explanatory Notes

Convicted Offender Profile: A DNA profile from an offender who was convicted of a designated offence (e.g. homicide, sexual assault, assault with a weapon, etc.). For a complete list of primary offences, see Appendix A; for secondary offences, see Appendix B.

Crime Scene Profile: A DNA profile derived from a biological substance left at the scene of a crime.

Table 4: Crime Scene Index Profiles Received	
Laboratoire de sciences judiciaires et de médecine légale (Montréal)	6,163
Centre of Forensic Sciences (Toronto)	8,501
RCMP Forensic Laboratory Services (Vancouver, Edmonton, Regina, Winnipeg, Ottawa, Halifax)	5,454
Total	**20,118**

Table 5: Convicted Offender Samples Received			
Retroactive	1,827	Primary	42,052
Retrospective	37,044	Secondary	36,479
Prospective	40,152	Non-designated	492
Total	**79,023**		

Alberta	7,864	Nunavut	359
British Columbia	7,954	Ontario	36,109
Manitoba	4,614	Prince Edward Island	161
New Brunswick	1,092	Quebec	13,483
Newfoundland	1,176	Saskatchewan	3,511
Nova Scotia	1,976	Yukon	162
North West Territories	562		

Explanatory Notes
The **Convicted Offender Index** is a post-conviction database composed of three categories of samples.

Retroactive: A sample taken from an offender who was found guilty of a designated *Criminal Code* offence before June 30, 2000 and who: 1) had been declared a dangerous offender; 2) was convicted of more than one murder committed at different times; or, 3) was convicted of more than one sexual offence, and on June 30, 2000 was serving a sentence of at least two years for one or more of those offences.

Approximately 2,242 retroactive offender files were opened. As of March 31, 2005, a total of 2,137 of these files had been concluded, with the remainder being prepared by the Attorneys General for court applications.

Retrospective: A sample taken from an offender who committed a designated offence before June 30, 2000 and was convicted after that date.

Prospective: A sample taken from an offender who committed and was convicted of a designated offence after June 30, 2000.

Primary Offences (see Appendix A)

Secondary Offences (see Appendix B)

Non-designated Offence: A sample taken from an offender who: 1) was convicted of an offence that is not a primary or a secondary designated offence; or, 2) does not belong to one of the categories of offenders set out in the retroactive scheme.

Samples Received versus Profiles Entered
As of March 31, 2005, the NDDB had received 79,023 biological samples and from these samples 75,138 DNA profiles were entered into CODIS. This difference (3,885) can be attributed to the rejected samples (see Table 7), the duplicate samples (see Table 2) and the DNA samples in process.

Table 6: Type of Data Bank Samples Received from Convicted Offenders		
Blood	77,684	98.3%
Buccal	1,237	1.6%
Hair	102	0.1%
Total	**79,023**	

Table 7: Sample Rejections		
Non-designated offences		492
Biological sample inadequate		81
Inappropriate kit		192
No court order		5
Other		187
Total	**1.2%**	**957**

In some instances, samples had to be taken a second time, pursuant to subsection 487.091(1) of the Criminal Code, *which provides for an application for resampling where a DNA profile can not be derived from the original sample. Since June 30, 2000, the NDDB has received 210 samples that were taken under this provision.*

Note: These figures do not include sample kits submitted without fingerprints. Typically, if an affidavit from the collection officer is provided at a later date, continuity is established and the samples can be accepted. Since June 30, 2000, the NDDB has received 560 sample kits that did not contain fingerprint information on the sample collection card or the fingerprint identification form. In some instances, samples had to be taken a second time using the provision provided by the *DNA Identification Act* using form 5.09. Approximately one per cent of samples cannot be accepted by the National DNA Data Bank for the reasons listed above.

Table 8: Breakdown of Convicted Offender Samples Received	
Young offenders	11,011
Adult offenders	67,987
Military offenders	25
Total	**79,023**

Table 9: Convicted Offender Index Breakdown of Offences	
Homicide	1,754
Sexual Assault	14,013
Break and Enter/Robbery	23,849
Assault	48,272
Other	4,484

Note: More than one offence may be associated with a sample received.

Explanatory Notes

The **Homicide** category includes manslaughter.

The **Sexual Assault** category includes rape, sexual intercourse with a female under 14 and between 14 and 16, sexual intercourse with the feeble-minded, sexual interference, invitation to sexual touching, sexual exploitation, incest, bestiality in the presence of or by a child, child pornography, indecent acts, offence in relation to juvenile prostitution, sexual assault with a weapon and aggravated sexual assault.

The **Break & Enter/Robbery** category is limited to the two offences.

The **Assault** category includes assault with a weapon or causing bodily harm, aggravated assault and assaulting a peace officer.

The **Other** category includes using explosives, causing death by criminal negligence, causing bodily harm by criminal negligence, causing

bodily harm with intent, dangerous operation causing bodily harm, dangerous operation causing death, failure to stop at the scene of an accident, impaired driving causing bodily harm, impaired driving causing death, unlawfully causing bodily harm, kidnapping, hostage taking, mischief causing danger to life, arson - disregard to human life, setting fire to other substance, arson - own property.

Table 10: Samples/Profiles Removed from the Data Bank

Conviction quashed on appeal	32
Authorization quashed	1
Judge ordered destruction of sample	1
Rejected contaminated sample	3
Rejected original from non-designated offence	2
Conditional discharge	73
Absolute discharge	7

Financial Statement

Expenditures – 2004/05 Fiscal Year

Cost Driver	Expenditures ($ thousands)
Personnel	1,389
Transport and communications	69
Information	10
Development and infrastructure support	93
Rentals	3
Repair and maintenance	58
Utilities, material and supplies	729
Capital and minor equipment purchases	67
Miscellaneous	9
TOTAL	**2,427**

Appendix A

List of Primary Offences – *Criminal Code*

	OFFENCE	SECTION
1	Approaching, entering, etc., a prohibited place	6 SIA*
2	Threats or violence	(20)(1) SIA*
3	Harboring or concealing (Security of Information)	(21)(1) SIA*
4	Piratical acts	75
5	Hijacking	76
6	Endangering safety of aircraft or airport	77
7	Seizing control of ship or fixed platform	78.1
8	Using explosives	81(1)
9	Participation in activity of terrorist group	83.18
10	Facilitating terrorist activity	83.19
11	Commission of offence for terrorist group	83.2
12	Instructing to carry out activity for terrorist group	83.21
13	Instructing to carry out terrorist activity	83.22
14	Harboring or concealing (Terrorism)	83.23
15	Sexual interference	151
16	Invitation to sexual touching	152
17	Sexual exploitation	153
18	Incest	155
19	Offence in relation to juvenile prostitution	212(4)
20	Infanticide	233
21	Murder	235
22	Manslaughter	236
23	Causing bodily harm with intent	244
24	Assault with a weapon or causing bodily harm	267
25	Aggravated assault	268
26	Unlawfully causing bodily harm	269
27	Sexual assault	271
28	Sexual assault with a weapon, threats to a third party or causing bodily harm	272
29	Aggravated sexual assault	273
30	Kidnapping	279
31	Hostage taking	279.1
32	Attack on premises, residence or transport of internationally protected person	431
33	Attack on premises, accommodation or transport of United Nations or associated personnel	431.1
34	Explosive or other lethal device	431.2(2)
	As they read from time to time before January 4, 1983:	
35	Rape	144
36	Sexual intercourse with female under fourteen and between fourteen and sixteen	146
37	Sexual intercourse with feeble-minded, etc.	148
	As it read from time to time before January 1, 1988	
38	Sexual intercourse with step-daughter, etc.	153.1(a)

Appendix B

List of Secondary Offences – *Criminal Code*

	OFFENCE	SECTION
1	Bestiality in the presence of or by child	160(3)
2	Child pornography	163.1
3	Parent or guardian procuring sexual activity	170
4	Indecent acts	173
5	Causing death by criminal negligence	220
6	Causing bodily harm by criminal negligence	221
7	Dangerous operation causing bodily harm	249(3)
8	Dangerous operation causing death	249(4)
9	Failure to stop at scene of accident	252
10	Impaired driving causing bodily harm	255(2)
11	Impaired driving causing death	255(3)
12	Assault	266
13	Torture	269.1
14	Assaulting a peace officer	270(1) (a)
15	Robbery	344
16	Breaking and entering with intent, committing offence or breaking out	348(1)
17	Mischief that causes actual danger to life	430(2)
18	Arson – Disregard for human life	433
19	Arson- Own property	434.1
	As they read from time to time before July 1, 1990:	
20	Arson	433
21	Setting fire to other substance	434

Note: An attempt to commit or, other than for the purposes of subsection 487.05(1), a conspiracy to commit any of the offences mentioned in the above list is also considered a secondary designated offence.

< *Notes to Appendix A*

**SIA: Security of Information Act*

Note: An attempt to commit or, other than for the purposes of subsection 487.05(1), a conspiracy to commit any of the offences mentioned in the above list is also considered a primary designated offence.

The NDDB's First Five Years: A Prosecutor's

Derrill Prevett, Q.C., has been prosecuting homicide trials for more than a quarter century.

Relying heavily on DNA analysis, he has prosecuted some of the toughest murder cases ever brought before British Columbia courts. His latest assignment is to present the Crown's forensic evidence in the case against Robert Pickton, the Port Coquitlam farmer accused of murdering more than two dozen women and burying their bodies on his property.

Mr. Prevett was actively involved in the consultations that led to the *DNA Identification Act*, a powerful piece of federal legislation that paved the way for the creation of the National DNA Data Bank in the spring of 2000.

"I feel very fortunate to be a prosecutor at a time when DNA has brought such clarity and objectivity to the justice system," he says from his New Westminster office. "The case law has reinforced the reliability of DNA evidence. Further, the appeal courts have consistently upheld lower court rulings that were built on forensic DNA evidence, and confirmed the constitutional validity of the National DNA Data Bank legislation."

Support within the legal community extends right across the country. In New Brunswick, prosecutor Jack Walsh, Q.C., echoes the sentiment of his west coast colleague. Mr. Walsh is a pioneer in the application of forensic DNA evidence within the criminal justice system.

"Knowing where we were and seeing how far we've come, I'm absolutely delighted with the way the science, the technology and the law have combined to enhance public safety," adds Mr. Walsh, who heads the Crown Prosecutor's office in Miramichi, New Brunswick. "It has far exceeded our expectations and has helped to secure convictions in cases we would not have been successful in prosecuting only a decade ago."

Jack Walsh is quick to add that the greatest value for DNA analysis may be as a tool to eliminate suspects and exonerate the innocent. "Many of the demonstrated wrongful convictions in Canada, the U.S. and elsewhere stand as testaments to the truth-seeking power of DNA evidence to right these wrongs," he concludes.

Not surprisingly, both prosecutors are highly optimistic about the future. The key, they insist, is to accelerate the number of profiles being uploaded to the NDDB.

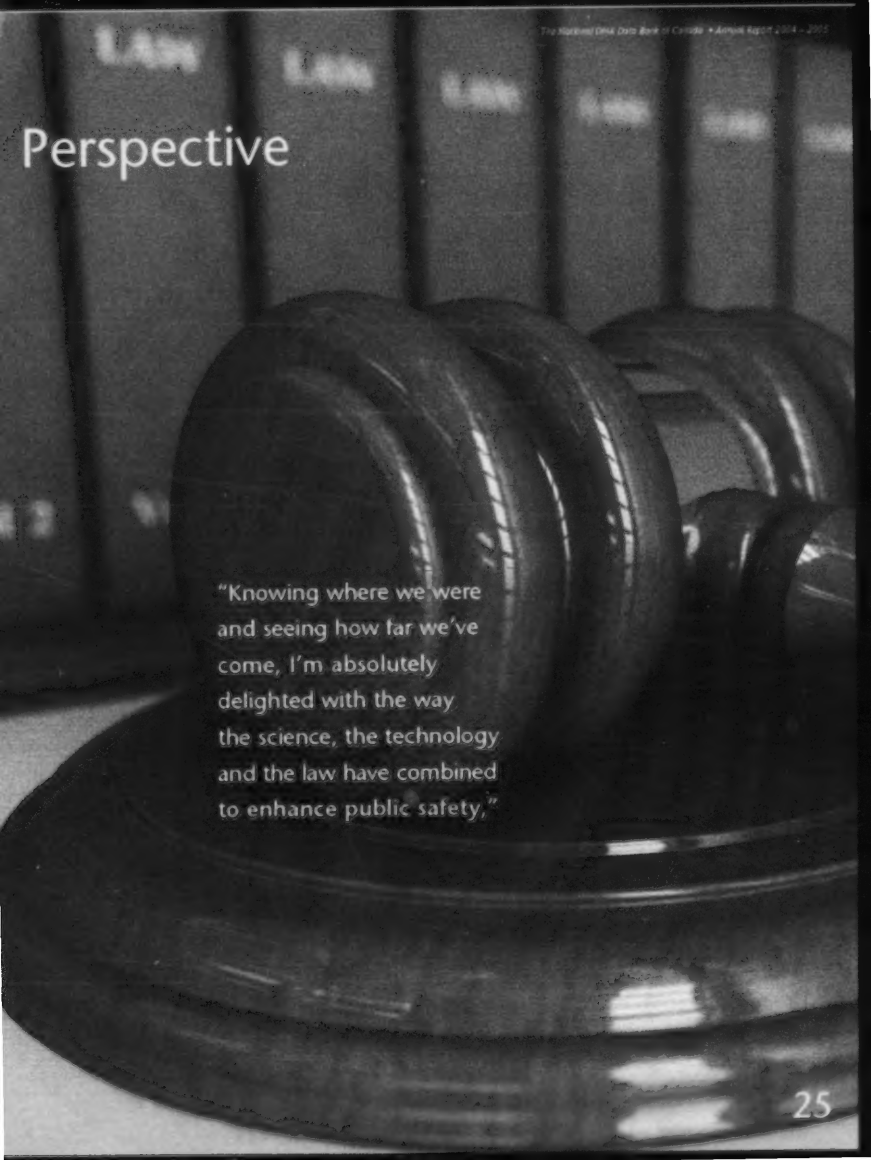
"The good news is that the numbers *are increasing* as judges and prosecutors become more familiar with the legislation," notes Derrill Prevett.

He points to several innovations that are helping to generate greater numbers of samples from BC courts. On the high-tech side, a province-wide computer system automatically flags any case where the law requires that a biological sample be taken upon conviction. Similar indicators appear on the court docket as a way to ensure that biological samples are ordered whenever the law requires it (see **Appendix A** for a list of primary offences) and to remind the judge of his/her discretion for secondary offences (see **Appendix B**).

There is progress on the east coast as well. Jack Walsh notes that awareness is steadily increasing among his colleagues and the judicial community through expanding case law, articles in legal publications and the mainstream media, as well as ongoing exposure to the effectiveness of DNA evidence in court.

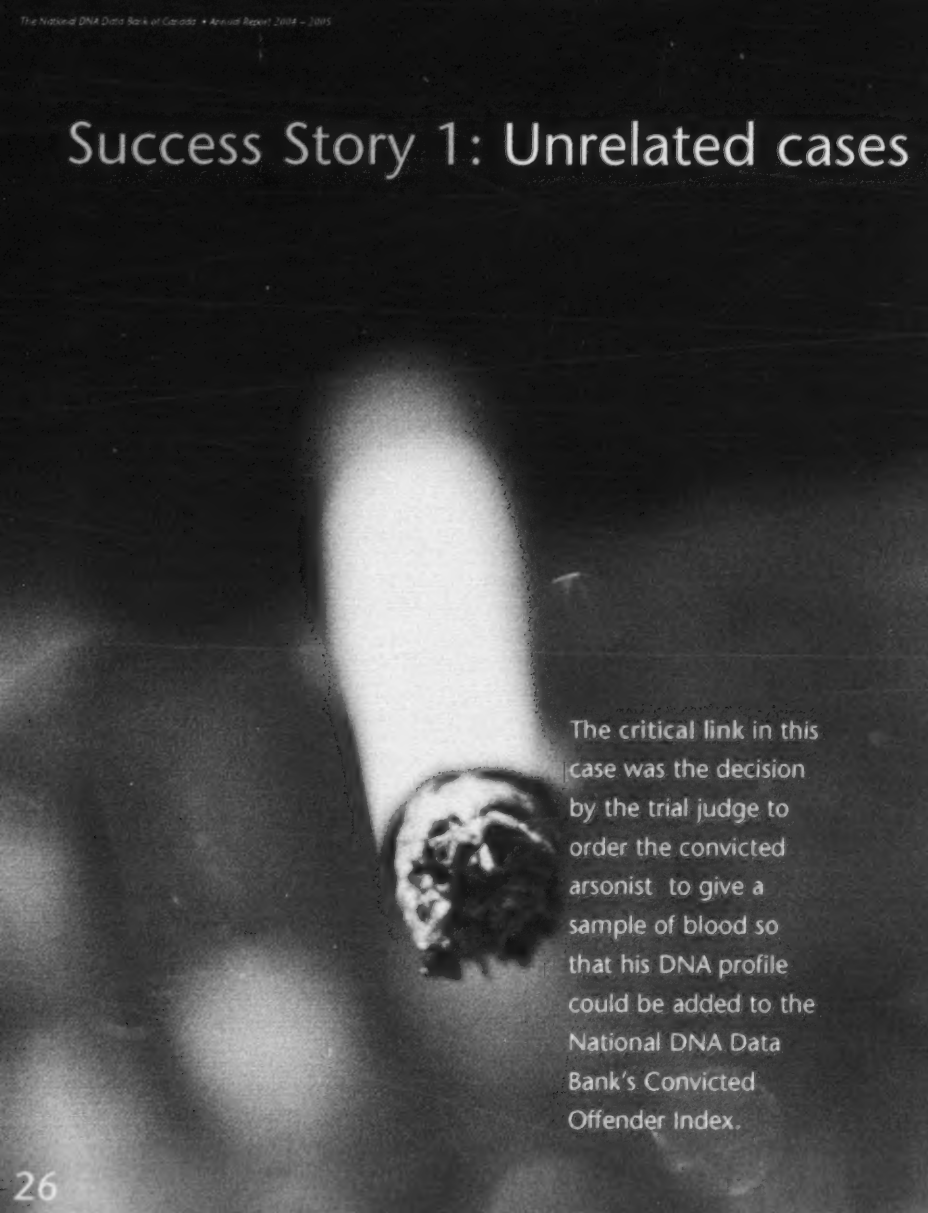
"Over the next few years, we can expect to see adjustments to the legislation and further refinements to the technology," says Mr. Walsh. "As the number of DNA profiles entering the NDDB continues to rise, so too does the number of hits. And each one represents a powerful piece of evidence that very often serves as the centrepiece of the prosecutor's case."

Perspective



"Knowing where we were and seeing how far we've come, I'm absolutely delighted with the way the science, the technology and the law have combined to enhance public safety."

Success Story 1: Unrelated cases



The critical link in this case was the decision by the trial judge to order the convicted arsonist to give a sample of blood so that his DNA profile could be added to the National DNA Data Bank's Convicted Offender Index.

tied together by a cigarette butt

The case centres on a series of violent assaults in a Montreal neighbourhood in the summer and fall of 2001.

According to Detective Sergeant Guy Bianchi, a 16-year veteran of the Montreal police service, the offender's method of attack was consistent. He would choose his victim – always a single woman living alone – and learn her daily routine. Eventually, he would force his way into her residence and sexually assault her.

"There was almost nothing to go on," adds Det. Sgt. Bianchi.

Investigators, with the help of scientists at the Laboratoire de sciences judiciaires et de médecine légale, generated DNA profiles from semen and blood left at two of the crime scenes. The results confirmed it was the same perpetrator.

Meanwhile, in what police thought was a totally unrelated case, an officer collected a discarded cigarette butt at the scene of an arson investigation. DNA was extracted from the cigarette butt and became one piece of evidence in the arson case that led to the conviction of a career criminal. Well known to police, the suspect was involved in a biker turf war over illegal drug sales.

The critical link in this case was the decision by the trial judge to order the convicted arsonist to give a sample of blood so that his DNA profile could be added to the National DNA Data Bank's Convicted Offender Index.

The judge in the arson trial had the discretion not to order a biological sample since it was a secondary offence. However, he made the order because of this criminal's history with biker gangs.

When the Montréal lab provided the DNA profiles from the two sexual assaults, they generated a "hit" on the Convicted Offender Index. It was a match with the arsonist's DNA – irrefutable evidence that put him at the scene of both crimes.

The offender was subsequently convicted of three sexual assaults and sentenced to 18 years in prison, to be followed by 10 more years of probation with strict conditions.

Bianchi has high praise for the trial judge. "If he had not ordered the collection of a biological sample for the arson conviction, there would be no DNA profile in the NDDB and virtually no chance to link him to the assaults."

Det. Sgt. Bianchi is quick to add that police and crown prosecutors also have a key role to play by requesting DNA orders for sample collection, particularly for secondary offences *(see Appendix B)*.

"A few years ago, it was sometimes difficult to get the DNA order. Now, it's much more frequent and it's making a huge difference."

Success Story 2: National DNA work solve 10-year-old murder

The victim had died in an area well known to police as a hangout for substance abusers.

She was 55-year-old Virginia Johanson, a resident of High Level, Alberta, about 800 kilometres northwest of Edmonton. An autopsy found multiple bruises and broken bones, but the cause of death was inconclusive. The overnight temperature had dipped close to zero degrees and the Medical Examiner concluded that she had probably died from hypothermia.

The discovery of the body sparked a full-scale police investigation. Members of the local RCMP detachment logged hundreds of hours interviewing potential suspects and following dozens of leads. Unfortunately, this did not result in any conclusive information to assist in solving the crime.

The autopsy yielded a semen sample that was sent for DNA profiling to the RCMP's Forensic Laboratory Services. Police interviewed dozens of local men and, with their consent, obtained blood samples that generated DNA profiles for comparison with that of the attacker.

There were no direct matches and, at that time, the National DNA Data Bank did not exist. However, DNA was used to eliminate some of those under suspicion in the case.

Six years later, the NDDB opened its doors, equipped with the latest in advanced technology to help link convicted offenders to unsolved crimes. The Edmonton site of the RCMP Forensic Laboratory Services submitted the DNA profile from the autopsy and hoped for a match.

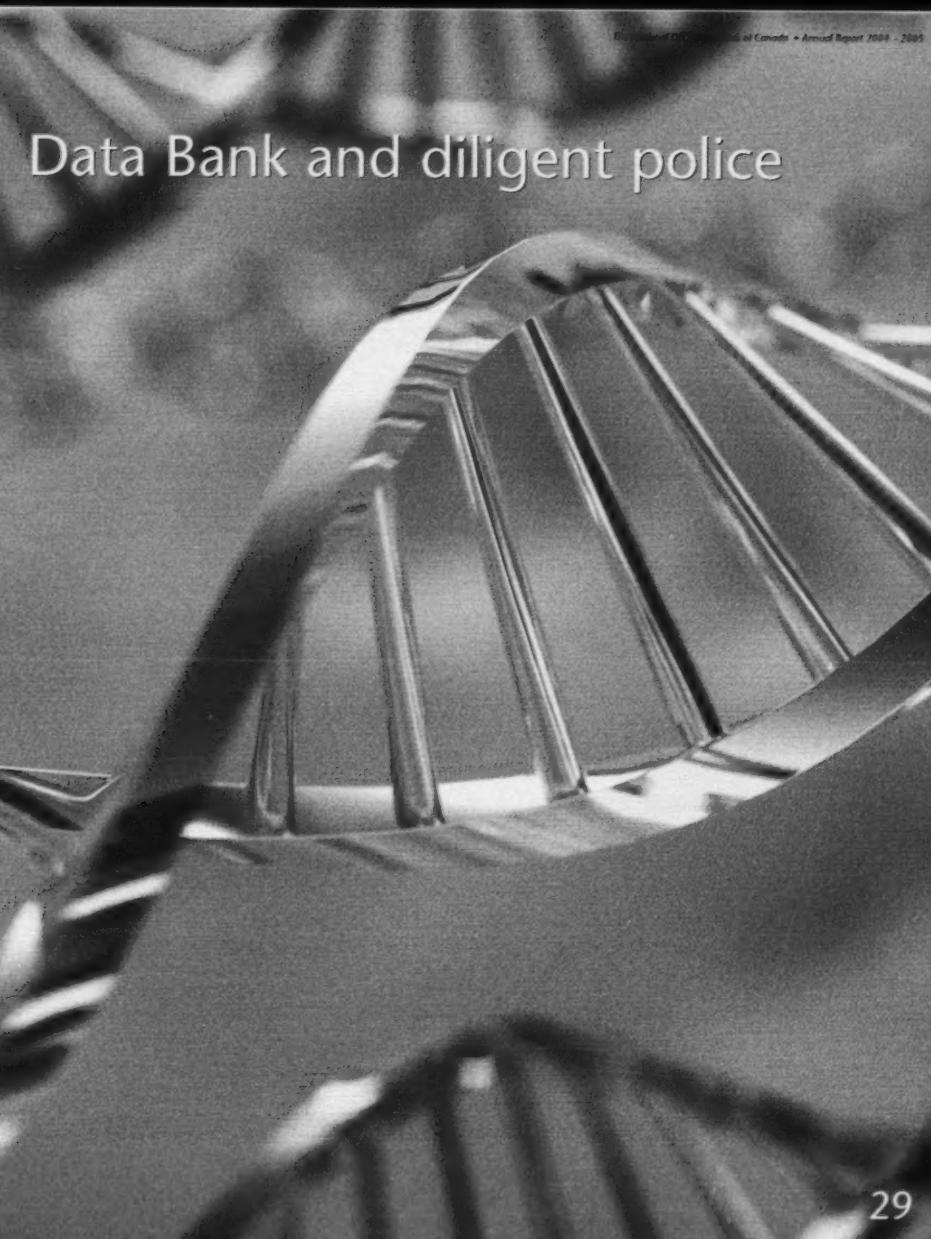
In the meantime, Calgary police had arrested a suspect for an alleged sexual assault. He had a lengthy criminal record for violent offences. He was convicted of the Calgary crime and according to a provision of the *DNA Identification Act*, the judge in the case ordered that a biological sample be taken. The resulting DNA profile was uploaded to the NDDB's Convicted Offender Index.

When scientists ran the profile through the database, it generated a "hit" with the crime scene profile from the murder in High Level, Alberta. This was strong evidence that put the offender at the scene of the 1994 murder.

Armed with this powerful new lead, RCMP investigators interviewed the offender at Bowden Federal Institution where he was serving time for the Calgary assault. When confronted with the DNA evidence, he confessed. He was subsequently convicted of manslaughter and sentenced to additional prison time.

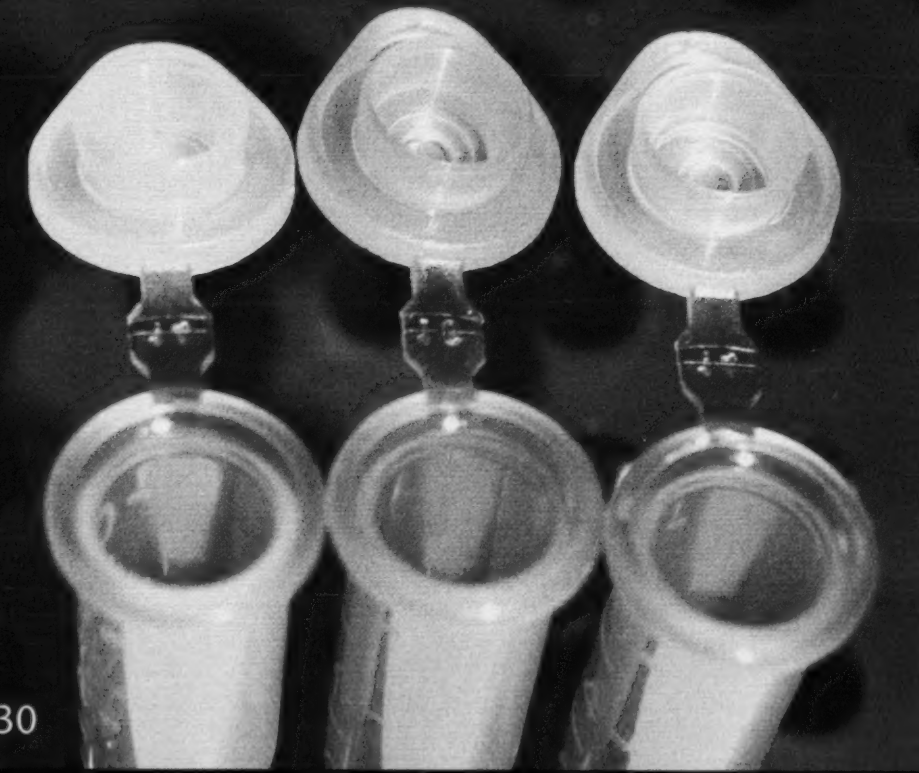
Police had never considered this individual as a suspect, even though he was known to the victim. The officers had been told he was fighting forest fires at the time. Diligent police work kept the investigation alive, DNA produced the vital piece of evidence and the NDDB made the critical link to the killer.

Data Bank and diligent police



Success Story 3: Cross-border

"The level of **cooperation** between the various international agencies was **remarkable**," adds the RCMP investigator. "It was a collaboration involving ten different offices in three different countries."



crime fighting

In April 2004, an Alberta woman was on holiday at a Mexican resort near Manzanillo.

After a scuba diving class, she agreed to go for a drink with the instructor. For eight hours, she was assaulted and held against her will. The victim was finally able to escape the next morning.

Upon her return to Canada, the victim reported the incident to Strathcona County RCMP. Scientists at the RCMP Forensic Laboratory Services site in Edmonton analyzed the victim's clothing and confirmed an unidentified male DNA profile that matched DNA found on an item of the suspect's clothing that the victim had grabbed when she escaped from her captor.

The RCMP lab sent the profiles to the National DNA Data Bank in Ottawa to be cross-referenced against both the Convicted Offender Index and the Crime Scene Index. There was no match with either Canadian index, but a follow-up international check with Interpol did generate a hit.

"The level of cooperation between the various international agencies was remarkable," adds the RCMP investigator. "It was a collaboration involving ten different offices in three different countries. Thankfully, there was a formal agreement with Interpol that allowed us to run the DNA profile through their data bank."

The suspect was identified as a 37-year-old man from California. Police think he may have been in Mexico under an assumed name. Authorities in the U.S. confirmed he had a history of similar offences and was a parole violator. Further investigation confirmed the suspect was being held in a Mexican prison for yet another alleged assault.

Evidence gathered in Canada was forwarded to Mexican authorities who laid additional sexual assault charges.

At time of publication, the case was still before the Mexican courts.

www.nddb-bndg.org

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